

Memorandum



Date: October 19, 2004

Agenda Item No. 7(D)(1)(A)

To: Honorable Chairperson Barbara Carey-Shuler, Ed.D.
and Members, Board of County Commissioners

From: George M. Burgess
County Manager

A handwritten signature in black ink, appearing to read "G. Burgess", written over the name "George M. Burgess".

Subject: Resolution Ratifying the County Manager's Action in Executing a Grant Application
to the United States Department of Agriculture Forest Service and Southern Group of
State Foresters

RECOMMENDATION

It is recommended that the Board approve the attached resolution ratifying the County Manager's action in applying for a \$100,000 grant with the United States Department of Agriculture Forest Service and Southern Group of State Foresters (USDA Forest Service). This grant will be used to contract American Forests, a non-profit organization, to conduct an Urban Ecosystem Analysis (Analysis) of Miami-Dade County. The approximate total cost of the Analysis is \$200,000. The USDA Forest Service will provide approximately 50 percent (\$100,000) toward the cost of the project and the Miami-Dade County Department of Environmental Resources Management (DERM) will provide an approximately 50 percent match (\$68,585 in cash and \$32,850 in-kind services). It was necessary for the County Manager to execute this grant application prior to formal Board approval in order to meet the grant application deadline of August 1, 2004. The attached resolution also allows the County Manager to receive and expend funding related to this grant upon award.

BACKGROUND

In 1996, an analysis done by American Forests, in association with DERM, concluded that the tree canopy coverage over unincorporated Miami-Dade averaged only 10 percent while some areas had canopy coverage of less than two percent. This analysis attributed factors such as urbanization and natural disasters, and more recently, diseases such as citrus tree canker to have contributed to decreased tree canopy percentages. The 1996 analysis also provided valuable information that assisted the County in its successful application to the State for the \$6 million Tree Canopy Restoration Grant (Adopt-a-Tree).

Upon receipt of the Urban Ecosystem Analysis grant, Miami-Dade County will contract with American Forests to perform the Ecosystem Analysis, which will include the following activities and outcomes:

- Use of satellite imagery analysis to identify and classify land covers, such as trees, grass, water, shrub, and impervious surface areas while calculating percentages of total land cover
- Quantify air and water quality, storm water reduction, and pollutant reduction values
- Show trends by illustrating changes in land cover and tree loss over time
- Provide information on green infrastructures versus gray infrastructure

Honorable Chairperson Barbara Carey-Shuler, Ed. D
and Members, Board of County Commissioners
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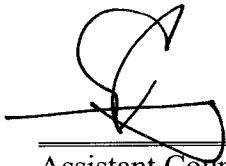
Additionally, the Urban Ecosystem Analysis will provide general trend information and effectively document the significance of trees which may then be highlighted and reaffirmed through public policy.

Successful fulfillment of the duties of the scope of this grant, will provide Miami-Dade County with the technology, knowledge, and public awareness tools needed to improve both the quality of the environment in the region and the quality of life of our residents as it relates to improvement of our tree canopy coverage.

Attachments

Attachment A: Grant Narration

Attachment B: Project Budget



Assistant County Manager



MEMORANDUM

(Revised)

TO: Hon. Chairperson Barbara Carey-Shuler, Ed.D.
and Members, Board of County Commissioners

DATE:

October 19, 2004

FROM: Robert A. Ginsburg
County Attorney

SUBJECT: Agenda Item No. 7(D)(1)(A)

Please note any items checked.

_____ "4-Day Rule" ("3-Day Rule" for committees) applicable if raised

_____ 6 weeks required between first reading and public hearing

_____ 4 weeks notification to municipal officials required prior to public hearing

_____ Decreases revenues or increases expenditures without balancing budget

_____ Budget required

_____ Statement of fiscal impact required

_____ Bid waiver requiring County Manager's written recommendation

_____ Ordinance creating a new board requires detailed County Manager's report for public hearing

_____ Housekeeping item (no policy decision required)

_____ No committee review

Approved _____ Mayor
Veto _____
Override _____

Agenda Item No. 7(D)(1)(A)
10-19-04

RESOLUTION NO. _____

RESOLUTION RATIFYING THE COUNTY
MANAGER'S ACTION IN APPLYING FOR
ACCEPTANCE AND EXECUTION OF A GRANT
FROM THE UNITED STATES DEPARTMENT OF
AGRICULTURE FOREST SERVICE AND
SOUTHERN GROUP OF STATE FORESTERS IN
ORDER TO CONTRACT AMERICAN FORESTS TO
CONDUCT AN URBAN ECOSYSTEM ANALYSIS OF
MIAMI-DADE COUNTY

WHEREAS, this Board desires to accomplish the purposes outlined in the accompanying memorandum, a copy of which is incorporated herein by reference,

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA, that this Board ratifies the County Manager's action in applying for a grant from the United States Department of Agriculture Forest Service and Southern Group of State Foresters, in substantially the form of the grant application attached hereto and made a part hereof, to provide \$100,000 to Miami-Dade County to contract with American Forests, a non-profit organization to conduct an Urban Ecological Analysis of Miami-Dade County and authorizes the County Manager to accept, execute and to expend any and all monies received for the purposes described in the funding request, to request and expend any additional funds that might become available during the term of the grant; and to exercise amendment, modification, renewal, cancellation, and termination provisions contained herein.


The foregoing resolution was offered by Commissioner _____, who moved its adoption. The motion was seconded by Commissioner _____ and upon being put to a vote, the vote was as follows:

Dr. Barbara Carey-Shuler, Chairperson	
Katy Sorenson, Vice-Chairperson	
Bruno A. Barreiro	Jose "Pepe" Diaz
Betty T. Ferguson	Sally A. Heyman
Joe A. Martinez	Jimmy L. Morales
Dennis C. Moss	Dorrian D. Rolle
Natacha Seijas	Rebeca Sosa
Sen. Javier D. Souto	

The Chairperson thereupon declared the resolution duly passed and adopted this 19th day of October, 2004. This Resolution and contract, if not vetoed, shall become effective in accordance with Resolution No. R-377-04.

MIAMI-DADE COUNTY, FLORIDA
BY ITS BOARD OF COUNTY
COMMISSIONERS

HARVEY RUVIN, CLERK

Approved by County Attorney as
to form and legal sufficiency. 

Peter S. Tell

By: _____
Deputy Clerk

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Attachment A- Grant Narration

Background Miami-Dade County is one of the largest, most populated and geographically unique areas in the south with more than 2.25 million residents and a geographic area of 2,054 square miles; an area which is as large as the state of Delaware. It is home to people from 156 countries, who communicate in 64 languages and boasts a multicultural population that lives and works in urban, suburban, agricultural, and commercial areas nestled between two national parks with fragile and unique ecosystems: Everglades and Biscayne National Parks.

The Miami-Dade County Department of Environmental Resource Management (DERM) is responsible for the restoration, enhancement, conservation, and management of the air, water, and land resources of the County for the health, safety and enjoyment of present and future residents and visitors. In 1996, an analysis contracted by DERM in collaboration with the non-profit organization American Forests, determined that the tree canopy cover of unincorporated Miami-Dade County averaged an alarmingly low 10% with several areas showing as little as one to two percent tree cover. Since that time, many new factors have emerged as new demands have been placed on the region's infrastructure thus warranting a current study. American Forest has also updated its technology and increased its sophistication and capabilities thus, giving it the ability to provide a precise and comprehensive analysis.

The region has continuously suffered from low canopy coverage due to setbacks such as hurricane Andrew in 1992 which destroyed a significant portion of the urban tree canopy, urban sprawl and development activities, increased impervious areas, and the recent removal of trees due to citrus canker. In addition, some of the existing canopy consists of a high percentage of invasive non-native species, which threaten natural areas and present hazardous conditions in windstorms. The elevation of Miami-Dade County is near sea level, thus making ground water just below the surface. A large portion of the urban area is formerly freshwater wetlands and other habitats found only in today's Everglades National Park. With an average annual rainfall of 63 inches a year, this infrastructure makes many areas susceptible to flood, particularly during the rainy season. Although stormwater systems were originally engineered to bypass the natural flow of stormwater to control and prevent floods, they were designed for fast drainage of runoff. This has compounded the problem and led to a host of additional problems such as pollution, failure to recharge groundwater, loss of wildlife areas, lack of natural seepage into waterways, and nutrients from natural rainwater cycles. The impact of these impediments is significant and demonstrates that adequate tree canopy is vital to the environmental health and economic well being of our community. **Objectives** Miami Dade County proposes to contract the services of American Forests, a non-profit organization, to conduct an urban ecosystem analysis utilizing Landsat satellite imagery, 30 meter ground resolution, of an approximately 1000 sq. mile region, including the area inside the Urban Development Boundary line and 445 square miles using high-resolution multispectral imagery (see attached draft proposal from American Forests). The Landsat satellite, which has been in orbit for 30 years, is capable of providing historical data to document regional

Attachment A- Grant Narration

tree loss over time . This provides general trend information and effectively documents the value of trees. The high-resolution multispectral imagery which will be utilized, will provide a 4-meter ground resolution, allowing the County to analyze the Urban Development Boundary area at once without the need for surveying sample sites, thus permitting a more complete analysis of tree cover. As a result, land covers will be identified and classified as trees, grass, water, shrub, and impervious surface areas while percentages of total land cover as well as air and water quality, stormwater reduction, and pollutant reduction values will be calculated. Additionally, trends will be illustrated to show changes in land cover over time.

The main objective of the project will be to build an updated comprehensive “green infrastructure” GIS data layer that can be used to make plans and decisions based on precise information regarding the full range of natural resources and definitive information on the built environment or the “gray infrastructure”. The goal is to utilize this information to educate policymakers on the importance of the urban forest and pervious surfaces so that this appreciation will be reflected and integrated into the natural systems used to manage air, water and energy. DERM personnel will be trained to interpret the data, utilize accompanying software, to identify land-use trends over time, establish a debris management model for hurricane preparations and recovery, incorporate informed environmental strategies into programs, target areas for future reforestation and aggressive urban forestry education.

Strategy: Project Timeline

Month 1-3	Contract with American Forests
Months 4-10	American Forests conducts analysis
Months 11-18	Miami-Dade County publicizes results and begins implementation into existing tree planting efforts

Project Team: The project team will utilize the existing partnerships of County staff such as air and stormwater engineers, biologists, arborists, and other government agencies such as Cooperative Extension service, Florida Division of Forestry, which will give regional support to this project, along with the non-governmental organizations such as TREEmednious Miami, Operation Greenleaves, and Grove Tree Man Trust, which will give local support, especially with the planting and educational matters. As the Countywide environmental agency, DERM will spearhead the dissemination of the ecosystem analysis and assist the municipalities with urban forestry policies within the municipal boundaries. Currently there are 33 municipalities within Miami-Dade County (see attached map and list with municipal populations). DERM will also facilitate the use of the layer in local planning to enable policymakers to see beyond boundaries and look at the regional picture. Additionally, technical experts within the local universities and colleges will be called upon to assist in the interpretation and utilization of the data from the analysis.

Regional application: This proposal is consistent with the Miami-Dade County Comprehensive Development Master Plan, Objective 8, as it aims to replenish and preserve the tree canopy of Miami Dade County. Like the previous ecological analysis in 1996, Miami Dade County will use the updated results of the ecosystem analysis to identify and restore areas previously

Attachment A- Grant Narration

populated by trees to achieve clean air, water, and as a tool to comply with federal stormwater permits (NPDES), stormwater discharge, and pollution reduction via the use of trees. This is of great significance since the Biscayne Aquifer; the sole drinking water source of South Florida can be easily contaminated by non-point-source pollution. Information derived from the project is therefore critical given the fact that the region is densely populated and continues to develop thus place high demands on its infrastructure by an ever-increasing population.

Outcome The Ecosystem Analysis project is expected to provide invaluable returns, as it will create precise illustrations of areas where County environmental resources should be channeled in particular, tree canopy restoration efforts, public right-of-way plantings, and areas which have critical urban forest needs. Another benefit will be derived from quantifying the amount of urban stormwater runoff and pollutant loading in our waterways. It will also complement our NPDES program by measuring urban runoff by Landsat satellite imagery. The results from this study will help our policy makers in enacting new regulations or change existing regulations to apply effective measures and eliminate ineffective rules to better manage our water resources.

Canopy restoration also helps mitigate the effect of urban heat islands, formed when vegetation is replaced by asphalt and concrete used for roads, buildings, and other structures necessary to accommodate the Miami Dade population. These surfaces absorb the sun's heat, causing surface temperatures and overall ambient temperatures to rise from 3-10 degrees in urban areas. As a result, smog created from the reaction of pollutants from urbanization and the sun is accelerated while warmer temperatures increase energy demands for air conditioning. In our present state, we also lack trees able to sequester pollutants such as nitrogen dioxide (NO₂), sulfur dioxide (SO₂), ozone (O₃), carbon monoxide (CO), and particulate matter of ten microns or less (PM₁₀) that already exist in the atmosphere. Given the fact that Miami Dade County is an ever-evolving region, and continued development is expected, the environment is undeniably susceptible to the impact of this phenomenon. Ultimately, the analysis will give Miami-Dade County the vision and foundation from which to build a better environmental community; replenish the tree population which will improve air quality by filtering pollutants, safeguarding against soil erosion from storm water, provide wildlife habitat, increase tree bio-diversity, and aid in community development plans, environmental governance and regulation.

Target Audience Miami-Dade County visitors, residents, decision makers, elected officials, County departments, and other government agencies, involved in decisions regarding the green and gray infrastructure, will benefit from the information gathered from the ecosystem analysis.

Attachment B: MIAMI DADE URBAN ECOSYSTEM ANALYSIS PROJECT BUDGET

Line Item	Description	Federal Funded	Grantee Match	Type
Landsat Imagery and Classification				
Landsat Imagery	1 years x 3 scene (2000 sq. miles)	\$1,950.00	\$0.00	C
Classification/Analysis	Includes summary report generation	\$2,535.00	\$0.00	C
SUBTOTAL		\$4,485.00	\$0.00	
High Resolution Multispectral Imagery				
High Resolution Imagery	Quick Bird Ortho-rectified New Collection	\$27,799.00	\$15,998.00	C
Small Project Multiplier		0.00	\$3,000.00	C
Classification/Analysis	For Imagery provided by Client	\$42,872.00	\$14,064.00	C
SUBTOTAL		\$70,671.00	\$33,062.00	
Deliverables				
Environmental Education Workshop	Educate the public on environmental issues	\$0.00	\$5,000.00	IK
Educational Materials	publications, displays	\$0.00	\$5,000.00	C
Project Report	8 page PDF and 500 printed reports	\$4,000.00	\$4,000.00	C
Digital data on CD	Value added Landsat and High res.	485.00	\$515.00	C
CITYgreen training	1-1/2 day at DERM, includes manuals, airfare.	\$0.00	\$3,700.00	C
CITYgreen training travel	2 nights hotel, meals (Instructors)	\$0.00	\$2,400.00	C
CITYgreen software	Includes users-manual, 1 year tech support	\$0.00	\$6,950.00	C
SUBTOTAL		\$4,485.00	\$27,565.00	
Total Direct Costs		\$79,641.00	\$60,627.00	
DERM In-kind Salaries	Project oversight, technical support	\$0.00	\$27,850.00	IK
Project Management American Forests		\$20,359.00	\$12,958.00	C
TOTAL PROJECT COST		\$100,000.00	\$101,435.00	

*C- Cash

* IK- In-kind

Urban & Community Forestry Regionally Significant Projects
2005 APPLICATION

EMPHASIS AREA THIS PROJECT MEETS Urban Forest Management

PROJECT TITLE An Urban Ecological Analysis of Miami Dade County

LOCATION (CITY, STATE) Miami, Florida

FEDERAL FUNDS REQUESTED (Do NOT include match) \$ \$100,000

NAME OF APPLICANT Miami-Dade County

ADDRESS 33 SW 2nd Ave, PH2

CITY Miami STATE FL ZIP 33130

FEDERAL IDENTIFICATION NUMBER 59-6000573

CONTACT PERSON Alyce Robertson PHONE (305) 372-6795

ADDRESS 33 SW 2nd Ave-PH2

CITY Miami STATE FL ZIP 33130

FAX (305) 372-6759 E-MAIL ADDRESS robera@miamidade.gov

As the duly authorized representative of the applicant name above, I hereby certify that all parts of the grant application have been read and understood and that all information submitted herein is true and correct. If awarded a grant under this program, said applicant agrees to comply with all Federal and State Guidelines for completion of the grant project.

George M. Burgess
Name of Authorized Representative

County Manager
Title of Authorized Representative

[Signature]
Signature of Authorized Representative

7/29/04
Date